

WHAT IS CLAIMED IS:

1 1. A method for screening compounds for biological activity comprising:
2 a) selecting a test library of compounds;
3 b) forming a first analytical model using a first recursive partitioning process
4 using a digital computer, wherein the first recursive partitioning process is performed on at
5 least some of the compounds in the test library of compounds;
6 c) forming a second analytical model using a second recursive partitioning
7 process using the digital computer, wherein the second recursive partitioning process is
8 performed on at least some of the compounds in the test library of compounds; and
9 d) determining a consensus compound set using at least the first analytical
10 model and the second analytical model.

1 2. The method of claim 1 further comprising:
2 forming a third analytical model using a third recursive partitioning process
3 using the digital computer, wherein the third recursive partitioning process is performed on at
4 least some of the compounds in the test library of compounds; and
5 wherein determining the consensus compound set further includes using the
6 third analytical model in addition to the first analytical model and the second analytical
7 model.

1 3. The method of claim 1 wherein the compounds that are used to form
2 the first and second analytical models are the same.

3 4. The method of claim 1 wherein the compounds that are used to form
4 the first and the second analytical models are different.

1 5. The method of claim 1 wherein the compounds that are used to form
2 the first and the second analytical models are the same and constitute a training set of the
3 library of compounds.

1 6. The method of claim 1 wherein test library of compounds comprise ion
2 channel modulators.

1 7. The method of claim 1 wherein d) is performed by the digital
2 computer.

1 8. The method of claim 1 wherein determining the consensus compound
2 set includes identifying compounds that are predicted to be active by both the first analytical
3 model and the second analytical model.

1 9. A computer readable medium comprising:
2 a) code for selecting a test library of compounds;
3 b) code for forming a first analytical model using a first recursive partitioning
4 process using a digital computer, wherein the first recursive partitioning process is performed
5 on at least some of the compounds in the test library of compounds;
6 c) code for forming a second analytical model using a second recursive
7 partitioning process using the digital computer, wherein the second recursive partitioning
8 process is performed on at least some of the compounds in the test library of compounds; and
9 d) code for determining a consensus compound set using at least the first
10 analytical model and the second analytical model.

1 10. The computer readable medium of claim 9 further comprising:
2 code for forming a third analytical model using a third recursive partitioning
3 process using the digital computer, wherein the third recursive partitioning process is
4 performed on at least some of the compounds in the test library of compounds; and
5 wherein determining the consensus compound set further includes using the
6 third analytical model in addition to the first analytical model and the second analytical
7 model.

1 11. The computer readable medium of claim 9 wherein the compounds that
2 are used to form the first and second analytical models are the same.

1 12. The computer readable medium of claim 9 wherein the compounds that
2 are used to form the first and the second analytical models are different.

1 13. The computer readable medium of claim 9 wherein the compounds that
2 are used to form the first and the second analytical models are the same and constitute a
3 training set of the library of compounds.

1 14. The computer readable medium of claim 9 wherein test library of
2 compounds comprise ion channel modulators.

1 15. The computer readable medium of claim 9 wherein the digital
2 computer is embodied by two or more computational apparatuses.

1 16. The computer readable medium of claim 9 wherein determining the
2 consensus compound set includes identifying compounds that are predicted to be active by
3 both the first analytical model and the second analytical model.